

**Notice of Allowability**

Application No.

10/634,863

Examiner

Prasad R Akkapeddi

Applicant(s)

YOO ET AL.

Art Unit

2871

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to \_\_\_\_.
2. ☒ The allowed claim(s) is/are 1-10.
3. ☒ The drawings filed on 06 August 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some\* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- \* Certified copies not received: \_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |   |
|--|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)           |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date ____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date <u>08/06/2003</u> | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                   |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material                                 | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|  | 9. <input type="checkbox"/> Other ____.   |

**DETAILED ACTION**

**EXAMINER'S AMENDMENT**

The application has been amended as follows:

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The title is changed as follows: "Liquid crystal display having a drain electrode with a plurality of protrusions and a fabrication method thereof".

***Allowable Subject Matter***

2. Claims 1-10 are allowed.
3. The following is an examiner's statement of reasons for allowance:

A search of the prior art did not disclose a method of fabricating a liquid crystal display device comprising the steps of:

(a) Patterning the drain electrode to form an L-shaped portion and a plurality of domains.

(b) Forming a protective layer on the source and drain electrodes such that side surfaces of the protective layer, the drain electrode, the ohmic contact layer and the active layer are exposed.

(c) Forming a pixel electrode on the protective layer to electrically contact the side surface of the drain electrode.

None of the prior art discloses the above sequence of steps.

For example:

(a) Kwon et al. (U.S. Patent No. 5,926,702) teaches that the pixel electrode (37) contacts the top surface of the drain electrode (31D) through a contact hole and also does not teach any protrusions of the drain electrodes nor does it teach the exposure of all the layers (Fig. 3C).

(b) Kim (U.S. Patent No. 6,043,511) teaches the electrical contact of the pixel electrode (70) with the side of the drain electrode (53). However, Kim does not teach the formation of a protective layer on the drain electrode (53) (Fig. 6).

(c) Park et al. (U.S. Patent No. 5,990,998) also teaches the electrical contact of the pixel electrode (325a) with the side of the drain electrode (324b). However, Kim does not teach the formation of a protective layer on the drain electrode (324b) (Fig. 4A).

(d) Moon (U.S. Patent No. 6,133,967) the pixel electrode (not shown) on the protective layer (10) but does not electrically contact the drain electrode (2) on the side surface (Fig. 8D).

(e) Kwon et al. (U.S. Patent No. 6,667,010) having the same assignee as the instant application teaches the formation of one protrusion (114a) at the drain electrode (114) (Fig. 6i). However, Kwon et al. do not teach plurality of protrusions.

Hence for the above reasons none of the prior art teaches the combination of steps as recited in the instant application and hence the case is allowable.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prasad R Akkapeddi whose telephone number is 571-272-2285. The examiner can normally be reached on 7:00AM to 5:30PM M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
\*\*\*

Prasad R Akkapeddi, Ph.D  
Examiner  
Art Unit 2871

  
TARIFUR R. CHOWDHURY  
PRIMARY EXAMINER

Application/Control Number: 10/634,863  
Art Unit: 2871

Page 5